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ABSTRACT
        A discussion of constraints on ellipsis after
auxiliaries in English focuses on a particular analytic problem
concerning nonfinite verb phrases using "be", which has a historical
dimension. A solution involving the morphological claim about the
copula and its incorporation of tense-distinctions is proposed and
discussed in the context of Generalized Phrase Structure Grammar
(GPSG). It is concluded that there is a synchronic and diachronic
justification for a GPSG analysis of the tensed forms of the English
copula as distinct from nonauxiliary verbs in two respects: (1) the
semantics of their combination with tense is given lexically, and (2)
they lack the morphology of verbal inflection. Advantages found in
this analysis are that the copula is consistent with the behavior of
the auxiliary "have" and that it deals naturally with the loss of the
ellipsis construction with tensed antecedent found in earlier
English. (MSE)

ELLIPSIS CONDITIONS AND THE STATUS OF THE ENGLISH COPULA*

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1. The Problem

Constraints on ellipsis after auxiliaries set us a
little-noticed and little-discussed puzzle with an important
historical dimension. In this paper I want to present a
solution involving a claim about the morphological
classification of the copula and its incorporation of tense-
distinctions. The framework is that of Generalized Phrase
Structure Grammar, but much of the discussion will be
untechnical and essential aspects of the solution should be
transportable to other frameworks.

The puzzle is simply stated. What underlies the
distinction between the types of 1 and 2?

(1)a. If John behaves well, then Mary probably will too
(sc. behave well).

   b. John seems well-behaved today, and he often has in
the past too (sc. seemed well-behaved).

(2)a. *If John is well-behaved, then Mary probably will too
(sc. be well-behaved).

   b. *John is well-behaved today, and he often has in the
past too (sc. been well-behaved).

In each a nonfinite VP must be supplied in ellipsis from a
tensed antecedent. With verbs which are not auxiliaries,
like behave and seem, this is unproblematic. But all
speakers of Standard English seem to agree that with be the
type is impossible.[1] A common reaction to it is
incomprehension and a failure to recognise that the
retrieval of a be-phrase is in question. Note that the
retrieval of the complement of be in such cases, as in 3, is
straigntforward, but that this is not the type under
discussion here.

(3)a. If John is wel_-behaved, then Mary probably will be
too (sc. well-behaved).

   b. John is well-behaved today, and he often has been in
the past too (sc. well-behaved).

It is clear that the form of the antecedent in 2 is
crucially involved, for in cases with an identical

antecedent, as in 4, ellipsis of a be-phrase is often straightforward.

(4)a. John will be well-behaved, and Mary will too (sc. be well-behaved).

   b. John has been well-behaved today, and he often has in the past too (sc. been well-behaved).

Thus the point here is that nonfinite be well-behaved, been well-behaved may not be retrieved from tensed is well-behaved, etc in sharp contrast to nonfinite behave well, behaved well which may be retrieved from a tensed antecedent.

   Cases of ellipsis after a nonfinite antecedent pose a separate problem. If the antecedent and the form supplied are distinct in morphosyntactic category, then some speakers find retrieval impossible, though instances with identical categories are accepted.

(5)a. ?*Paula may be late this evening. She already has once this week (sc. been late).

   b. ?*The children have been very good here. I wish they would at home (sc. be very good).

   c. Paula may be late this evening. In fact I think she probably will (sc. be late).

   d. The children have been very good here. I wish they had at home (sc. been very good).

Here be is again distinct from nonauxiliary verbs with which such retrieval is generally straightforward (see Warner 1985: 58f for some discussion). But some speakers I have questioned find a high proportion of instances like 5a,b acceptable, and even those who typically reject them accept some isolated cases. And they are occasionally to be found in English text. Thus this type looks like a distinct problem from that of 2 above which is never accepted by these speakers. I have discussed this type in Warner 1985 (see also Levin 1980, 1981 for further restrictions on the ellipsis of be), and here I would like to focus on the question posed by the impossibility of a finite antecedent.

   There is an important historical dimension to this problem, for examples like 2 are found in earlier English. Instances to parallel 2a can be found throughout Middle English, and for Modern English until the end of the eighteenth century, cf Visser (1963-73: III First half: sections 1752ff). The last author to use such constructions that I know of is Jane Austen (cf Phillipps 1970). The type of 2b is less common but also appears.

(6)a. I think, added he, all the Charges attending it, and
       the Trouble you had, were defray'd by my Attorney: I
       order'd that they should [sc. be defrayed - ARW].
       They were, Sir, said he; and Ten Thousand Thanks to
       you for this Goodness,...   Samuel Richardson,
       1740-1. Pamela, London: third edition 1741, vol 2
       p129.

   b. I wish our opinions were the same. But in time they
       will [sc. be the same - ARW].   Jane Austen, Emma.
       1816. ed. by R.W. Chapman, Oxford: OUP 1923, p471
       (cited from Phillipps 1970: 142).

     The fact that closely related dialects of English
differ in this respect is clearly of great importance. It
is hard to believe that the striking solidity of the
present-day rejection of the construction and the consequent
sharpness of the contrast with earlier English is not based
in some systematic grammatical facts. Grammatical
prescription seems unlikely to be an adequate source for
this contrast, even if the construction was ever the
specific focus of prescription, and I know no evidence that
it was. It is not mentioned in Leonard's survey (1962 cf
especially VI.4). We have then an opportunity to uncover
the parameters underlying this dialect difference. And to
convince, any account of the absence of 2 in today's English
must be supported by a plausible account of its loss.

     Before turning to a particular proposal, I will make
two more general points. The first is that the simple fact
that the relationship between tensed is, etc and be is
suppletive cannot be what accounts for the difference
between 1 and 2. For one thing the relationship was
suppletive in earlier English too when the type was
permitted. For another, some speakers find ellipsis
involving retrieval from suppletive instances natural,
though reactions are rather variable. Thus Sag 1977 cited 7
as grammatical without comment despite the retrieval of go
from suppletive went.

(7)   Although John went to the store, Betsy didn't (sc. go
       to the store). Sag 1977: 8, (1.2.9a.)

It would clearly not be adequate to add a simple constraint
against suppletion to the conditions required for instances
with nonfinite antecedents as an account of the finite
cases.

     The second general point is that perfect have in
ellipsis after a finite antecedent is not simply parallel to
be with finite antecedent. Although examples are often
rejected, there is not the sense of total impossibility
found in 2, and instances where appropriate adverbials aid
retrieval are sometimes relatively acceptable.
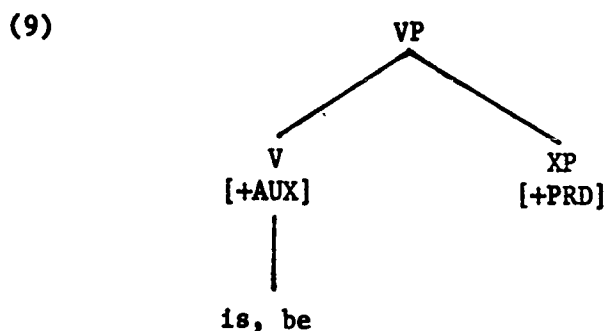
(8)a. ?*John has probably kissed his grandmother good
        night, but Paul won't yet (sc. have kissed his
        grandmother good night).

   b.   ?*Have you seen one yet? You should by now if
        they're really there (sc. have seen one).

As a group such instances are better classed with ellipsis
of _be_ after a nonfinite antecedent.

2.   Assumptions _of_ Analysis

   The framework of analysis is that of Generalized Phrase
Structure Grammar (GPSG) as presented in Gazdar, Klein,
Pullum and Sag 1985 (GKPS). In what follows I will take for
granted that predicative, 'progressive' and 'passive' _be_ are
to be identified as the same item, that it belongs to the
word class 'verb' and subclass 'auxiliary', and that both
finite and nonfinite instances occur in a structure like 9
where the predicate will carry further specification.

(9)
```
                    VP
                   /  \
                  /    \
                 V      XP
              [+AUX]   [+PRD]
                |
                |
              is, be
```

These positions are adequately defended in Gazdar, Pullum
and Sag 1982, Warner 1985. Ellipsis of the predicate here,
though often called 'Verb Phrase Deletion/Ellipsis' belongs
to a class involving the complement of an auxiliary. 'Post-
Auxiliary Ellipsis' is a better term. I will assume that
such ellipses are the product of a metarule which specifies
an empty complement whose meaning must be retrieved from the
preceding linguistic context. In Warner 1985: 55, which
generalises the treatment of Gazdar, Pullum and Sag 1982,
the empty complement is XP[+NUL] where XP[+NUL] -> e. In
the system of GKPS the complement will be XP[+NULL]/XP.[2]

   Notice that though at first sight it might seem that
the contrast between tensed and nonfinite _be_ here points to
a treatment in which _is_ + predicate does not form a
constituent, as in the popular analysis where there is a
finite auxiliary position immediately dominated by S (cf
Akmajian, Steele and Wasow 1979, and references), the fact
that _be_ and _have_ differ in behaviour is against such a
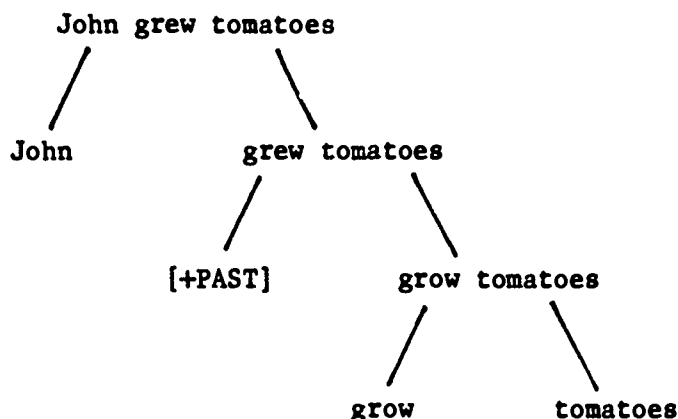simple view.

3. A Solution

I want to suggest that the tensed forms am, are, is, was, were (henceforth 'the am-forms') should be analysed in GPSG with tense incorporated as part of their basic meaning, stated in the lexicon. They differ from the majority of verbs for which the semantic interpretation of tense takes place at VP-level. This provides a straightforward account of the failure of ellipsis with the am-forms noted above, since with them an untensed VP-meaning is not available for retrieval.[3] This position is plausible from a morphological point of view since the am-forms entirely lack regular verbal inflection, a characteristic which they share with the majority of the class of modals. Moreover the position is historically plausible since the loss of the ellipsis type discussed above is coeval with the loss of characteristics shared by modals, the am-forms and nonauxiliary verbs. In what follows I will deal in turn with each of these topics.

3.1 A Semantic Analysis

Carlson 1983 points out that it is often the case that grammatical formatives appear, or grammatical oppositions are made overt, at a lower position in constituent structure than is appropriate for their semantic interpretation. Thus the morphological contrast of English tense appears within a verb, but the semantic scope of tense is at least VP (and perhaps also S, cf Janssen 1983). GKPS cope with this general phenomenon by assigning a translation to particular feature values (terming the features 'semantical') and ensuring that interpretation is operative at the feature's highest point of occurrence in a tree in cases where a feature percolates across different levels of structure (p223ff). For English tense they argue from coordination facts that this should be at VP level, and they assign their feature-value pair [+PAST] the interpretation PAST' and the model theoretic type <VP,VP>. Note that GKPS use syntactic category labels to denote the corresponding model theoretic type and I will also use this convention. This means that a PTQ-type semantic analysis tree for John grew tomatoes is as in 10.

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(10)
```
                    John grew tomatoes
                   /                  \
                  /                    \
                 John              grew tomatoes
                                   /           \
                                  /             \
                             [+PAST]         grow tomatoes
                                             /          \
                                            /            \
                                         grow          tomatoes
```

In GKPS semantic interpretation applies to syntactic
trees, not to rules as in earlier formulations of GPSG.
Each node in a syntactic tree is paired with a translation
in an 'interpreted tree' by the Semantic Interpretation
Schema developed in their Chapter 10. In this schema, the
semantics of [+PAST] is integrated as part of the complex
process of assigning a translation to the node unmarked for
[PAST] which immediately dominates VP[+PAST], say S. Thus
the syntactic subtree dominated by VP[+PAST] is assigned an
untensed translation in the interpreted tree: it corresponds
to grow tomatoes in 10. And the stage of semantic analysis
which corresponds to the tensed grew tomatoes is assigned to
no syntactic node in this interpreted tree; it is merely a
step in the composition of the translations of the
constituents of S (GKPS chapter 10, especially pp225-6).

Now, Sag and Hankamer 1984 argue that what is relevant
to instances of ellipsis which, like Post-Auxiliary
Ellipsis, require a linguistic antecedent is a notion of
identity at a level of Logical Form which is 'highly
determined by surface syntactic structure' (p329). In
particular, syntactic VP corresponds to a unit in it. A
natural suggestion within GPSG is that a necessary (but not
sufficient) condition on retrieval in Post-Auxiliary
Ellipsis is as follows:

(i) What is retrieved corresponds to a semantic expression
attached to a node in an interpreted tree of the preceding
discourse (where 'corresponds to' covers the relaxations of
simple identity developed in Sag 1977, Sag and Hankamer
1984).

Given this, the semantics of the untensed grow tomatoes
will be straightforwardly retrievable from the VP grew
tomatoes. Consider now those other morphosyntactic features
which are semantically interpreted. An obvious candidate is
the progressive participle: [VFORM PRP] (see Warner 1985 for
relevant arguments). Another likely possibility is the past
participle: [VFORM PSP]. The fact that the interpretation
of semantical features on VP takes place after composition
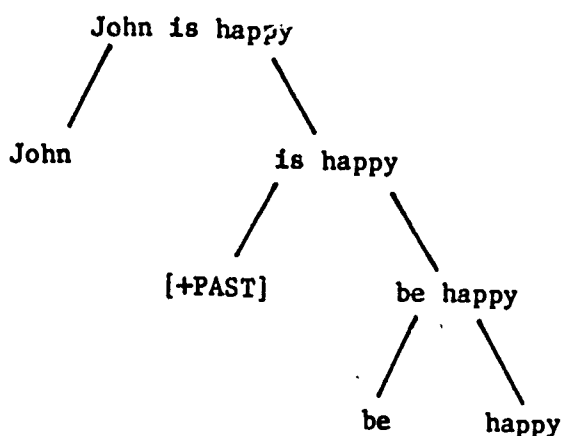of the semantics of the constituents of VP has two

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consequences. It means that it is only the semantics of the
simple VP (<u>grow tomatoes</u>) which is retrievable from the
participles (<u>growing tomatoes</u>, <u>grown tomatoes</u>) as from the
tense-marked form. It also means that it is the semantics
of the simple VP which is to be supplied in ellipsis, for
the semantics of the appropriate morphosyntactic category
will be supplied from the feature marking on the complement
XP[+NULL]. Thus we correctly predict that examples like the
following (cited from Pullum and Wilson 1977: 766(47)) are
all grammatical.[4]

(11)a. I haven't done it yet but I will (sc. do it).

    b. Harry will probably tell Sarah - in fact he probably
       already has (sc. told Sarah).

    c. Max is selling hot dogs for a living, and soon all of
       us will have to (sc. sell hot dogs for a living).

    d. I'm hoping that not all of my gerbils will die, but
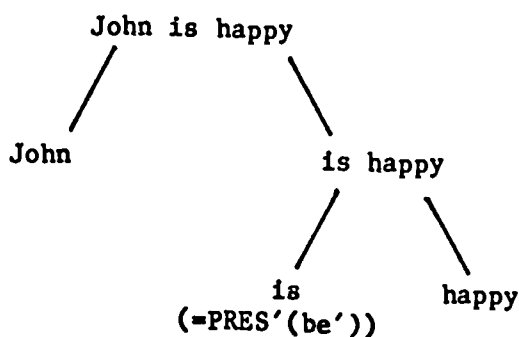   the weak ones already are (sc. dying).

Moreover, the semantic appropriacy of what is retrieved to
the site of ellipsis is automatically guaranteed for
nonauxiliary verbs by Condition (i) and the operation of the
Semantic Interpretation Schema, and there is no need to make
a special statement to ensure this. Thus this points
towards a simple and elegant account of conditions on Post-
Auxiliary Ellipsis.[5] Notice, however, that a weaker version
of Condition (i), requiring what is retrieved merely to be
an expression of a preceding analysis tree, is sufficient
for the discussion of this paper, whose points will stand if
it is ultimately preferred to the stronger condition given
above.

    Given this, my proposal for <u>be</u> is very simple. I
suggest firstly that we need to state a semantics for the
present tense so that we have an operator PRES' beside PAST'
as assumed, for example, by Dowty 1982, Cooper 1985. It will
correspond to the syntactic feature-value pair [-PAST].
Secondly, I suggest that the <u>am</u>-forms are not interpreted as
tensed forms of <u>be</u> with an analysis tree 12 parallel to 10
but appear in the lexicon with tense as part of their
meaning. (Indeed if nonfinite <u>be</u> is to be analysed as an
identity function the meaning of the <u>am</u>-forms will simply be
that of tense.) The appropriate analysis tree is given in
13.

(12)

```
                    John is happy
                   /            \
              John             is happy
                              /        \
                        [+PAST]        be happy
                                       /      \
                                     be        happy
```

(13)

```
                John is happy
               /            \
          John             is happy
                          /        \
                        is          happy
                   (=PRES'(be'))
```
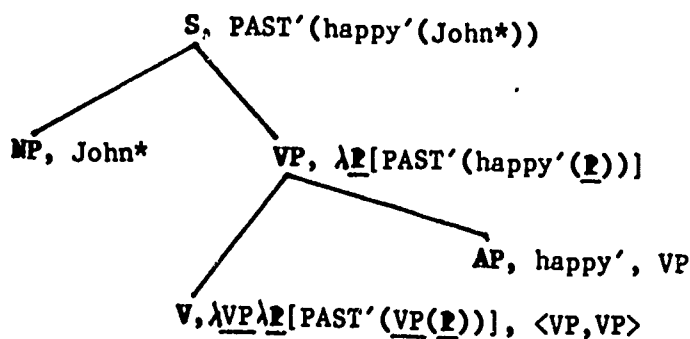
On the assumption that nonfinite be is an identity function the lexicon will supply the semantic statements of 14, and the am-forms will be entered without specification for the syntactic feature [PAST].[6]

(14) am, is, are $\lambda VP\lambda \textbf{P}[PRES'(VP(\textbf{P}))]$, <VP,VP>
      was, were $\lambda VP\lambda \textbf{P}[PAST'(VP(\textbf{P}))]$, <VP,VP>
      be, been, being $\lambda VP(VP)$, <VP,VP>

Here $\textbf{P}$ is a variable over Den(NP), VP is a variable over Den(VP) as defined in GKPS Chapter 9.

A schematic interpreted tree (including some type information) is given in 15.

(15)   John was happy.

```
                    S, PAST'(happy'(John*))
                   /            \
          NP, John*            VP, λP[PAST'(happy'(P))]
                              /        \
                                        AP, happy', VP
                   V,λVPλP[PAST'(VP(P))], <VP,VP>
```

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In this tree the interpretation associated with the VP-node is tensed. Therefore under Condition (i) above it cannot supply the untensed expression required in Post-Auxiliary Ellipsis,

This leaves the problem of the semantics of the complement of be. Why cannot well-behaved' simply be retrieved from $\overline{AP}$ to supply the semantics of VP? This is impossible for predicative AP, AP[+PRD], not only in the structures considered here, but also more generally.

(16)a. What, Mary well-behaved! - Yes she was.

b. What, Mary well-behaved! - Well, she ought to *(be).

(17)a. John came early, well-behaved as ever - Yes, he always is.

b. John came early, well-behaved as ever - Yes, he feels he must *(be). [* = sc. be well-behaved]

The distinction between AP and VP here is not one of semantic type if AP[+PRD] has the type of VP as argued in GKPS: 192f. But there are two other possibilities. The first is that be is not an identity function, so that the semantics of well-behaved and be well-behaved is distinct, cf the analyses of be given in Montague 1973, Dowty, Wall and Peters 1981. The second is that a condition of syntactic identity should be added to that for retrieval given above:

(ii) What is retrieved belongs to a syntactic category which is not distinct from that required at the site of ellipsis.

This condition is suggested in Warner 1985 to cope with the ungrammaticality of ellipsis involving different morphosyntactic forms of be as in 5a,b above (since the categories involved are interpreted as syntactically distinct for auxiliaries though not for other verbs). It is also required to prevent retrieval of the translation of be + predicate (VP[+AUX]) after do, whose complement is VP[-AUX]. So there is some more general support for such a condition. Either of these possibilities would suffice to rule out the inappropriate retrieval of AP well-behaved' to supply VP in 2, 16 and 17.

Finally, what about examples like 8 (repeated here for convenience) which retrieve nonfinite have from antecedent tensed have?

(8)a. ?*John has probably kissed his grandmother good night, but Paul won't yet (sc. have kissed his grandmother good night).

b. ?*Have you seen one yet? You should by now if
    they're really there (sc. have seen one).

As pointed out above, these differ from the parallel
cases with antecedent am-forms in being sometimes relatively
acceptable. But if the translation of untensed have-phrases
may sometimes be retrieved, this suggests that the semantic
contribution of [+PAST] to the perfect may be integrated at
VP-level as with other verbs. Then, if we assume that the
type of inverted have is <VP,VP>, PTQ-style analysis trees
for 8a and b will contain an expression corresponding to
untensed have-phrases. In 8a it will be paired with a
syntactically distinct node from that required at the site
of ellipsis, in 8b with no node in the syntactic tree. The
fact that retrieval is not always totally unacceptable may
show the relevance of the weaker version of Condition (i)
referred to above. Given that 8a, b are to be analysed as
ungrammatical, we require the stronger version and Condition
(ii). There is some variation in judgements, and it is
possible that the weaker condition is general and that there
is interpersonal variation in the application of the
stronger conditions. But the general point is rather that
the account of the am-forms developed here does not
necessarily carry over to have any more than to the be-
forms, so that it is consistent with the differences
observed between these categories.

Thus within this framework it is possible to specify
the meaning of the am-forms in such a way as to account for
their idiosyncratic behaviour as antecedents to ellipsis. I
will now try to provide some morphological and historical
justification for such an analysis of the am-forms.

3.2 A Morphological Distinction

Considered as a verbal paradigm the am-forms (am, are,
is, was, were) show two peculiarities. Firstly, they show
no regular verbal inflection. It seems clearly better to
regard the form is as invariable than as containing third
singular -s. Secondly, the forms are not simply suppletive
to other verbal paradigms, since they carry a different and
fuller set of distinctions. It might make better sense to
view them as falling outside the morphological framework of
verbal distinctions, rather than suppletive variants within
such a framework.

This suggestion is supported by the status of modals,
for they also lack regular verbal morphology. They do not
carry the third singular present -s. Their 'past tense'
forms only refer to the past in a minority of uses, and they
are no longer formed by rule from the corresponding
'presents'. It is striking that modal need lacks the
regular nonmodal preterite needed in Standard English, that
many speakers also lack the modal preterite dared, and that

uninflected dare, daren't and needn't are pressed into
service as past tenses (Huddleston 1980, Quirk et al 1985:
138-9, Visser 1963-73 III First half: sections 1348, 1363).
Thus with the possible exception of the marginal used and
the restricted dared (a form supported by dare's tendency to
blur the modal/nonmodal contrast) modals might reasonably be
analysed as a distinct class of verbs at the level of
morphology: one which entirely lacks verb morphology, though
able to carry a contrast in tense.

But now the am-forms may clearly be assigned to this
morphological class. In a historical perspective this is
unsurprising, for the am-forms have long shared
morphological characteristics with modals or the broader
group of preterite-present verbs which contained the
ancestors of most of our present-day modals. Old English þu
eart 'thou art', hie sindon, hie earon 'they are' showed
preterite-present formations (cf þu scealt 'thou shalt', hie
sculon 'they shall'). Then the sixteenth century saw the
establishment of the alternations thou art~they are, thou
wert~they were in Standard English, replacing earlier thou
art~they be(n), thou were~they were. This again parallels
(and may be partly modelled on) the interrelationship thou
shalt~they shall found in modals (see OED Be, v.)

For these reasons it seems to me rather plausible to
take the am-forms as belonging with modals to a class of
verbs which lacks verb morphology (though not auxiliary
morphology if -n't is inflectional, cf Zwicky and Pullum
1983). The be-forms (be, been, being) and forms of the
auxiliaries have and do do not however belong to this class.
Their inflected forms are open to analysis as both
morphologically and semantically transparent, if partly
irregular.

This analysis does not of course bear directly on the
way tense is represented in the am-forms without further
assumptions. But if am-forms are morphologically distinct
from the major class of verbs, it is clearly reasonable to
suggest that they may lack a further verbal characteristic.

3.3 History

3.3.1   Until the early nineteenth century there occur
examples in which an antecedent am-form permits retrieval of
a nonfinite VP, as in 6b above, repeated here for the
reader's convenience.

(6)b.   I wish our opinions were the same. But in time they
        will [sc. be the same - ARW].   Jane Austen, Emma.
        1816. ed. by R.W. Chapman, Oxford: OUP 1923. p471
        (cited from Phillipps 1970: 142).

If the account given above is appropriate, then the am-forms

presumably carried a feature [PAST] interpreted at VP-level
like other verbs until this period. Then, or perhaps at
earlier periods for some speakers or styles, they were
reanalysed becoming the modern holistic combinations with
tense.

This development is open to a reasonable interpretation
within the present framework. Two changes are particularly
relevant: the increasingly distinct constructional
properties of auxiliaries and nonauxiliary verbs as do takes
on its modern distribution, and the loss of inflections in
the am-forms (and in modals) dependent on the loss of thou.

(i) Loss of shared constructions. In Early Modern English
auxiliary do and nonauxiliary verbs may both appear in
inversion or before not where auxiliary do is now
obligatory.

(18)a. From whence came you, and whither go you?

   b. What answer did you make the villain?

(19)a. I flatter not myself with any manner of hopes.

   b. He is the only man in the three Nations who does not
      know it.

(Examples from Dryden's prose, from Söderlind 1951-8.)

With individual lexical items full verb inversion can occur
throughout the eighteenth century. But the failure of 'do-
support' is infrequent in some texts even from the first
half of the century, and seems largely to be restricted to a
handful of recurrent items, such as mean, say, and think.
Loss of postverbal not is rather later. Examples are not
uncommon throughout the eighteenth century, though again,
from the second half of the century it seems to be a few
recurrent items which are mainly involved.

The loss of these constructions with full verbs
clearly removes important properties shared by auxiliary and
nonauxiliary verbs. A grammar of English written in 1700
would have to identify tensed verbs as the locus of negation
and inversion. By 1850 auxiliaries alone were involved.
This loss of shared properties must clearly increase the
possibility that the am-forms would be reanalysed as lacking
a further verbal characteristic. But the fact that these
forms are unlike the be-forms or have in behaviour implies
that something further is involved. I take this further
crucial factor to be (ii).

(ii) Inflectional loss dependent on the loss of thou.
Before the loss of thou, the am-forms retained inflection,
cf the form wast and the interrelationship (shared with
shall and will): art~are, wert~were, shalt~shall, wilt~will.

Despite its narrow scope the rule here is simply stated: auxiliary plural stems ending in a liquid add -t for the thou-form (remember that postvocalic [r] is only lost in Standard English from the late eighteenth century). Thus before the loss of thou the am-forms retained the major verbal characteristic of agreement inflection, and were presumably analysed as a separate, largely suppletive paradigm. But this motivation for assignment to the same morphological class as nonauxiliary verbs disappears with the loss of thou. And this loss in standard colloquial English, used between intimates, to children, to servants and inferiors, or to show contempt, seems to belong to the second half of the eighteenth century. It is common in appropriate circumstances in Richardson's Pamela of 1740-1, and it appears in plays later in the century, cf Bock 1938. But nineteenth century occurrences are very infrequent, and belong to dialect or the language of prayer or heightened discourse. Thus this loss occurs at a period appropriate for the required reanalysis of the am-forms.

Modals, moreover, undergo a parallel loss. They had carried the normal agreement inflection for thou in the preterite and some present forms, cf the examples of 20.

(20)   may(e)st, might(e)st, would(e)st; speak(e)st, spok(e)st.

Loss of thou meant loss of agreement inflection, and the development of a morphological subclass to which the am-forms could also be assigned. Moreover the 'preterites' of modals already had a very high degree of independence from the 'present' forms, and the interrelationship had been morphologically irregular since the sixteenth century at the latest. Thus modals were open to interpretation as a group lacking all regular verbal morphology, and perhaps as a group with 'lexical' tense (though this could also have been an earlier development). Thus modals changed morphological status at this period, whatever the precise details, in a way that supported reanalysis of the am-forms.

This interpretation involves multiple causation. The widening word-class gap between auxiliaries and nonauxiliaries, and the factors which led to this developing opposition clearly underlie it. But it highlights the loss of processes of verbal inflection as providing the specific occasion for change. This seems appropriate both in terms of date since the changes seem to follow one another closely (though there are obvious uncertainties in such an assessment) and because it ties in with the distributional distinction between the am-forms and have or nontensed forms of be. I have discussed this so far in general, word-class terms, but it may be that we need to characterize a special relationship between the loss of inflection and the loss of the type of 2. Within a Government and Binding framework one might try to relate these properties directly.[7]   But

there are other possible types of interconnection. It would
surely be reasonable to suggest that the 'semantical' status
of the tense feature here depends on transparency of tense-
formation in the general case (not in the particular,
because of suppletion). A principle like 21 would motivate
the am-forms' loss of the semantical feature if loss of
regular agreement inflection removed these forms from the
morphological category of inflected verb.

(21)   Tense features may be semantical in a category which
        has regular processes of tense formation.

Moreover, if the reader accepts, as suggested above, that
today's am-forms do not carry inflection and are not
suppletive to inflectional categories of the verb, then
Greenberg's Universal 30, which refers to inflectional
categories, is clearly highly suggestive:

(22)   'If the verb has categories of person-number or if it
        has categories of gender, it always has tense-mode
        categories' (Greenberg 1963: 93).

Perhaps, then, English maintained the analysis of [PAST] as
a semantical feature with the am-forms only until these
became distinguished by lack of agreement inflection. Thus
it seems very probable that there is some more systematic
interconnection involved here. But its nature requires
further research.

3.3.2   There may be a further factor involved in the loss
of the ellipsis type of 2. Although on the face of it the
am-forms in Modern English have always made one more
distinction than nonauxiliary verbs in the indicative
paradigm, it is possible that we should interpret the loss
of thou as leading to the hypercharacterization of this
distinction. For the the first time the am-forms would have
become hypercharacterized as a verbal paradigm, and hence
less readily taken as suppletive to verbal inflections.
Suppose that the person-distinctions of Present-day English
involve the features of 23a and are as in b.

(23)a.   [PTC] 'participant': [+PTC] = 1, 2; [-PTC] = 3.
          [EGO]: [+EGO] = 1; [-EGO] = 2, 3.
          [PL]: 'plural'.

     b.   1st singular [+PTC, +EGO, -PL]
           2nd singular [+PTC, -EGO, -PL]
           3rd singular [-PTC, -EGO, -PL]
           1st plural   [+PTC, +EGO, +PL]
           2nd plural   [+PTC, -EGO, +PL]
           3rd plural   [-PTC, -EGO, +PL]

These features are straightforwardly related to those
suggested by Sag, Gazdar, Wasow and Weisler 1985. The
lexicon will then specify the following agreement categories

for the present tense of sing, where AGR is the agreement
feature of GKPS which takes instantiations of NP as its
values:

(24)　　sing　[AGR NP[+PTC, -PL]]　　　1, 2 sing
　　　　sings　[AGR NP[-PTC, -PL]]　　　3 sing
　　　　sing　[AGR NP[+PL]]　　　　　　1, 2, 3 plural

It is not necessary to specify forms more completely granted
the lexical insertion convention of GKPS: 34 according to
which the syntactic node dominating a lexical item may be
more fully specified than that item. And it is not possible
to remove the homonymy between the forms sing without an
equivalent disjunction unless the theoretical apparatus is
extended to include `gative conditions on feature value
pairs as part of a l/　　il entry. But the identity of these
forms can be stateu　ithin the morphology by redundancy
rule, or as the consequence of an `elsewhere' condition.
See Warner 1986 for some discussion of the feature system
proposed here and of these further points.

　　　The system for Early Modern English must represent in
addition the distinction between thou and singular you.
This encodes a distinction in the relationship between
participants which is grammaticized only here. A rather
natural way of representing this in GPSG is to introduce a
feature PROFORM with two values {thou, you}.[8] The lexicon
will then specify the agreement categories of 25, again
leaving statements of identity to the morphological
component.

(25)　　sing　　　　[AGR NP[+EGO, -PL]]　　　1 sing
　　　　sing(e)st　[AGR NP[PROFORM thou]]　　2 sing thou
　　　　sing　　　　[AGR NP[PROFORM you]]　　2 sing you
　　　　sings　　　[AGR NP[-PTC, -PL]]　　　3 sing
　　　　sing　　　　[AGR NP[+PL]]　　　　　　1, 2, 3 plural

　　　But given this, the loss of thou leads to a
simplification of the agreement paradigm of English, from 25
to 24. This has an important consequence for be. The
earlier verbal paradig. provides a category for each of the
am-forms.

(26)　　I am　　　　　　was
　　　　thou art　　　　wast, wert
　　　　you(sg) are　　was, were
　　　　he is　　　　　was
　　　　they (etc) are　were

The later paradigm does not. The formal distinction between
am, was and second singular are, were, has no place in it.
Thus the am-forms can no longer be simply interpreted as
suppletive members of a verbal paradigm.[9]

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In this discussion I have made a series of assumptions
about person and number distinctions and the representation
of paradigms in the lexicon.   They seem to me to be
reasonable assumptions, but clearly I can do no more than
suggest that the am-forms become hypercharacterized as a
verbal paradigm when thou was lost and that this provided
further motivation for their loss of verbal behaviour in
ellipsis at this period.

4.   Conclusion

I conclude that there is synchronic and diachronic
justification for a GPSG analysis of the tensed forms of the
English copula as distinct from nonauxiliary verbs in two
respects: the semantics of their combination with tense is
given lexically and they lack the morphology of verbal
inflection. The first property underlies the idiosyncratic
failure of these forms to occur as antecedents to Post-
Auxiliary Ellipsis.   This arises with their loss of verbal
properties, in particular with the development of a class
containing modals and am-forms which lacks verbal
inflection. Particular advantages of the general analysis
given here are that it is consistent with the distinct
behaviour of auxiliary have and that it deals naturally with
the loss of the ellipsis construction with tensed antecedent
which is found in earlier English.

It would be possible to retreat to a vaguer and less
satisfying account in which a simple (though minor)
difference of category was taken to underlie the distinction
discussed here. But the more explicit account is clearly
preferable.

FOOTNOTES

*   Thanks to Gerald Gazdar, Steve Harlow and David Reibel
    for their comments. But any mistakes are my own.

1   The type is possible with will in the second clause in
    the English of speakers bilingual in English and Welsh.
    But this is readily interpreted as a calque on Welsh
    structures. See Warner 1985 note 31.

2   Here [+NULL] will prevent further expansion, and the
    slash category will not percolate up the tree since its
    presence in the rule is stipulated by metarule. Note
    that Napoli 1985 analyses the auxiliary in Post-
    Auxiliary Ellipsis constructions as a propredicate.
    But her arguments for this position are mainly directed
    against a deletion analysis and are not convincing
    against the type of account offered here.

3   Oehrle, in Steele et al 1981: 259 n 18, apparently
     suggests that untensed representations may not be
     retrieved from am-form + predicate, so that retrieval
     fails.   But he offers neither analysis nor
     justification.

4   See Warner 1985: 58f for discussion of variability in
     such data.

5   A syntactic condition and a Feature Cooccurrence
     Restriction (or restrictions) will also be required,
     see below. Condition (i) deals appropriately with
     these examples:
     (a) *John was laughing, so Mary's being [sc. laughing]
         does not surprise me. (ok: so the suggestion that
         Mary was [sc. laughing]...)
     (b) *Men are to dress formally, so I suppose women must
         be [sc. to dress formally] as well.
     In dialects where being permits ellipsis, the
     translation of progressive laughing may not be
     retrieved in (a), only that of nonprogressive laugh.
     But no progressive interpretation is available after
     being which is not subcategorized for such complements
     (see Warner 1985). We may, however, need to ensure
     adequate specification of the [+NULL] complement by
     Feature Coccurrence Restriction to prevent the
     retrieval of simple laugh. In (b) the feature
     corresponding to to must be semantical on a node marked
     [+PRD]. Hence the translation of to arrive is not
     retrievable, only that of arrive. But this cannot be
     supplied in context. Notice, however, that given the
     account of the am-forms developed below, Condition (i)
     does not account for the failure of (c) where a tensed
     VP is retrieved:
     (c) *If John was miserable, then Mary must [sc. have
         been miserable].
     I suggest, however, that the answer here lies in a more
     sophisticated semantics which distinguishes finite and
     nonfinite forms. In particular, the model theoretic
     type of finite and nonfinite phrases should perhaps be
     distinguished, cf Schmerling's 1983 treatment of clause
     types, or Bach's 1980 'minimal revision' of PTQ.

6   We will, however, need to prevent the occurrence of am-
     forms under V and VP marked for [PAST], since lexical
     items may be inserted under more fully specified nodes
     (GKPS: 34). Avoiding the negative lexical condition
     ¬[PAST], this can be done by the following restriction
     on feature cooccurrence:

     FCR   SUBCAT[9] ⊃ ¬[PAST]   (w³   V[9] is be).

     But I suspect that lacking a value ᵣ [PAST] is a more
     general auxiliary property and that a more general

default would be appropriate.

7   One might seek to align the final loss of agreement
    inflection in the am-forms with loss of coindexing
    between these forms in INFL and their trace in VP,
    assuming that VP represents a retrievable unit of
    Logical Form.   This would give a more direct
    relationship between loss of inflection and loss of
    ellipsis than the present account.   The assumptions
    required would however involve a radical revision of
    the account in Roberts 1985, and it is not clear to me
    that they can be sustained.

8   I assume that PROFORM is a freely instantiated HEAD
    feature subject to the following FCR:

    FCR   [PROFORM] ⊃ [+PTC, -EGO, -PL]

    This gives correct results for coordination and the
    occurrence of reflexives.   Alternatively a feature
    based on the semantic opposition between thou and you
    might be adopted.   Other pronouns would simply
    neutralize the distinction.   But the solution above is
    better paralleled within GPSG.

9   I do not want to deny the general possibility of
    hypercharacterized paradigms, cf aller, avoir, être in
    spoken French, which distinguish between 1 sing and 2,
    3 sing in the present indicative unlike other verbs.

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